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# Veterinary Services: Protecting America's Animal Health

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*Photo credit:* All the photographs in this book were taken by APHIS photographer Laurie Smith.

*Front cover:* VS veterinarians work with sheep breeders to develop flocks that are free of scrapie, a fatal degenerative disease of the central nervous system.

*Back cover:* VS monitors the health of imported pet birds to be sure they don't carry plagues like exotic Newcastle disease, which could devastate the U.S. poultry industry.

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## Mission



In Pennsylvania, a VS veterinarian drag-swabs the environmental surfaces of poultry houses for the presence of *Salmonella enteritidis*, which has recently been found not only in chickens but also in eggs. This organism causes many cases of "food poisoning."

Veterinary Services (VS) is the animal health arm of the Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture (USDA). VS is dedicated to protecting, sustaining, and improving the health, quality, and productivity of the Nation's herds and flocks of livestock and poultry. To pursue optimum animal health, VS depends on the latest scientific methods and procedures to develop appropriate rules and regulations under authority established by Congress.

VS strives to serve not only the livestock producers of this country but also consumers of animal products and citizens concerned about public health and environmental safety. VS pursues its goals, cognizant that success requires cooperation with others. To this end, VS fosters continuous communication among health professionals in States, foreign governments, and industry organizations.

## **Scope of Activities**

Managing VS animal health programs involves five major activities:

- Keeping foreign animal diseases from entering the country,
- Providing an emergency response when exotic livestock diseases slip past U.S. borders,
- Controlling or eradicating major domestic livestock diseases,
- Preventing the interstate spread of diseases, and
- Facilitating exports by attesting to the health status of outgoing animals.

## Employees



VS official checks on the health of a traveler's pet bird kept under quarantine at a border port.

VS employees—more than 30 percent of whom have advanced degrees in such specialties as veterinary science, epidemiology, and public health—perform their duties in all parts of the country. Management and staff specialists work at APHIS headquarters offices in and near Washington, DC. The field force operates out of four regional headquarters with local offices in nearly every State, generally in the capital.

VS employees working with animal imports have major quarantine facilities at Honolulu, HI, Los Angeles, CA, and Miami and Fleming Key, FL. VS also has both import and export facilities at Newburgh, NY, which is part of the Port of New York.

Most VS laboratory workers are at the National Veterinary Services Laboratories in Ames, IA, or at high-security laboratories on Plum Island, off the coast of New York's Long Island. Employees concerned with animal health statistics operate the National Animal Health Monitoring System at Fort Collins, CO.

VS veterinarians get support from a corps of about 45,000 private veterinarians who are officially accredited to test and certify an animal's health status. Field operations also depend to a critical extent on the close cooperation of State employees, the veterinary profession, and the livestock and poultry industries.

## Port Operations



VS tick riders patrol the Texas–Mexican border on the lower Rio Grande River Valley to intercept cattle that may carry ticks or pose other disease problems.

VS veterinarians and animal health technicians are stationed at most border crossing points and ports of entry to intercept incoming diseased animals and contaminated animal products before they enter the United States. Other VS employees maintain patrols along the Texas–Mexican border on the lower Rio Grande River Valley, alert to cattle that wander or are driven into this country. These so-called tick riders attempt to intercept ticks that can debilitate cattle and spread disease.

Incoming animals that need to be quarantined can be accommodated at a variety of facilities. VS operates four Government-owned quarantine stations to handle commercial shipments of livestock and other animals. VS also operates six small quarantine centers at border ports to facilitate the safe entry of personally owned pet birds brought in by international travelers. In addition, VS veterinarians and technicians supervise biosecurity at about 65 privately owned bird-import facilities near major U.S. ports.

## **Emergency Programs and the READEO System**

VS specialists track exotic livestock diseases worldwide and evaluate the risks posed by these diseases. When exotic diseases breach U.S. border defenses, VS officials assess the threat and decide how best to respond.

One option is to activate the Regional Emergency Animal Disease Eradication Organization (READEO), teams of trained VS employees, other Federal workers, and State and industry personnel. A READEO team stands by in each of four VS regions of the country, ready to fight exotic diseases.

READEO support personnel store and maintain equipment and update procedures so that they can quickly set up field operations to aid in disease eradication. The READEO's conduct regular practice exercises to assure that they remain prepared.

READEO's in action confirm and diagnose the presence of exotic disease, inspect infected and exposed animals, and appraise the value of animals that have to be destroyed. READEO workers are trained to dispose of animal carcasses, clean and disinfect premises, set and enforce regulations against disease spread, control disease vectors, direct vaccination programs, and conduct epidemiological studies.

VS maintains an Emergency Programs Information Center at the APHIS headquarters in the Maryland suburbs of Washington, DC. This center has facilities to coordinate field operations against diseases in several parts of the Nation simultaneously. The center maintains a data base of more than 70,000 scientific articles on pests and diseases with easy access to disease control specialists in case of a disease emergency.

## National Veterinary Services Laboratories



Diagnostician at the VS National Veterinary Services Laboratories works under a laminar flow hood to detect possible salmonella contamination in samples collected on a poultry farm.

The various VS laboratories analyze blood, tissue, and environmental samples to promote disease tracking and identification. Diagnosticians work rapidly and accurately to help APHIS epidemiologists in the field find the cause of a disease as quickly as possible.

Laboratory workers also assist in quality control of animal vaccines and related products. VS laboratory technicians check test samples of production runs of manufacturers licensed by APHIS' Biologics, Biotechnology and Environmental Protection unit. Any biologics that don't meet Federal standards are kept off the market.



VS officials must keep accurate records to identify blood samples taken in the field for diagnostic tests that support animal health programs.

VS cattle disease specialists are trained to respond when outbreaks of cattle diseases, such as brucellosis and tuberculosis, are reported. Staff officers work with State animal health officials to quarantine infected farms, eliminate infected and exposed cattle, and restrict the movement of cattle to prevent the spread of disease. VS officials also solicit the help of industry, trade, and professional organizations to reduce the risk of reinfection.

The staff is presently focused on completing the longstanding eradication efforts against brucellosis and tuberculosis in cattle. At the start of the 1990's, animals at only a few locations remained infected, and the staff is working on plans to finish the job by the turn of the century.

## Swine Diseases



VS veterinarian checks the ear tag on a pig as part of a swine health campaign. Identification is essential to trace back a disease outbreak.

Staff officers handling key swine diseases, such as swine brucellosis and pseudorabies, manage eradication programs and coordinate educational campaigns to prevent infection.

A major disease prevention program assures that waste food from restaurants, institutions, and other sources is cooked properly before it is fed to swine.

## Other Diseases



VS also monitors and controls the spread of several major diseases of sheep, goats, poultry, and horses. For example, staff officers strive to reduce the economic impact of scrapie, a destructive disease of sheep and goats. Speedy eradication has not proved feasible, so VS veterinarians are coordinating a voluntary industry program that ensures sources of uninfected animals for breeding to gradually eliminate infected bloodlines. Another major preventive program seeks to stop poultry diseases from spreading between farms and through marketing channels.

Staff veterinarians also coordinate the National Poultry Improvement Plan, which concentrates on controlling egg-transmitted, hatchery-disseminated diseases, such as pullorum and typhoid. Here again, the emphasis is on providing the industry with healthy breeding stock.



VS inspectors examine and quarantine incoming animals, even if they are destined for life in a zoo, in order to protect the health of farm animals.

This center promotes global trade in livestock and poultry by reducing barriers posed by diseases and pests. One staff works to prevent introduction of exotic diseases and pests into the United States.

Another staff coordinates documentation for exported animals to show they are healthy and meet the importing country's standards. If needed, animals to be exported can be held and treated at various APHIS-approved export inspection facilities.

## National Animal Health Monitoring

VS specialists track the extent and cost of significant diseases on a State, regional, and national basis and collect, analyze, and disseminate data collected by other APHIS employees and their cooperators.

The monitoring program uses the latest electronic data storage and retrieval techniques to establish a clearinghouse of statistically sound information on domestic animal diseases and pests. The objective is to have a complete national disease picture at a central location, readily accessible to all who have a stake in the information.

VS veterinarians work with poultry breeders to secure healthy breeding stock to control egg-transmitted, hatchery-disseminated diseases.

## Special Campaigns

To reduce the incidence of salmonella contamination in table eggs, VS operates a program to trace cases of human illness to a source. VS veterinarians work with public health officials to identify cases of salmonella-caused illness that can be attributed to eggs. Once infected flocks are identified, VS inspectors impose quarantines and work with the egg producers involved until the infection is eliminated.

Another project is directed at infestations of cattle fever ticks and tropical bont ticks on cattle in Puerto Rico. The ticks are considered a major threat since they debilitate cattle, reduce dairy and meat production, and spread disease. VS has quarantined the entire island, and a cooperative program with the Commonwealth's department of agriculture plans to free the island from these parasites by 1997.



## History and Accomplishments

The diseases that now concern VS were no problem to early livestock producers in North America. Animal diseases that plagued Europe, Asia, and Africa were unknown on this continent. The situation changed dramatically in the 1800's, after a cow sick with contagious bovine pleuropneumonia arrived at the Port of New York and spread the disease to susceptible animals in the newly established U.S. dairy industry.

The threat to U.S. domestic and foreign markets prompted Congress to establish the Bureau of Animal Industry within USDA in 1884. Bureau scientists immediately tackled the outbreak of contagious bovine pleuropneumonia, eradicating it by 1892.

The Bureau's scientists later helped eradicate several other disease outbreaks. Their most ambitious project was to eliminate nine outbreaks of foot-and-mouth disease, a disease that threatens all major classes of livestock. The last traces of this disease in the United States were wiped out in 1929, and U.S. disease specialists went on to eradicate outbreaks in Canada and Mexico as well.

Federal disease management campaigns succeeded in ridding U.S. livestock and poultry producers of Texas cattle fever, fowl plague, glanders, dourine, vesicular exanthema, and screwworm infestations. More recently, new campaigns overcame Venezuelan equine encephalitis, sheep scabies, exotic Newcastle disease, hog cholera, and a highly pathogenic form of avian influenza. These campaigns proved the efficacy of maintaining task forces of trained specialists to deal with invasions of exotic diseases.

The Bureau of Animal Industry was abolished in 1953, and its responsibilities for animal disease management were adopted by USDA's Agricultural Research Service. In 1971, these responsibilities again were passed on—this time to APHIS.

An important current objective of animal health workers is to monitor U.S. livestock continuously for signs of new disease outbreaks. One situation these workers keep their eyes on is the appearance, in the south-central and southwestern parts of the United States, of a febrile systemic hemorrhagic condition in swine that mimics hog cholera. If the condition is hog cholera, it becomes imperative to eliminate infected herds. A positive diagnosis of hog cholera would affect U.S. export markets and trigger a major, costly eradication campaign.

## Future Trends

A number of new directions for VS programs are in the works or on the horizon:

- VS is devoting more resources to preventing and tracking disease while directing fewer resources at extensive new federally managed disease-eradication campaigns.
- VS is encouraging producers to eradicate diseases through voluntary industry-operated programs. For example, the former VS-directed eradication campaign against scrapie in sheep and goats now has become a voluntary industry program supervised by VS. The immediate aim of the program is to reduce the economic damage incurred by producers and to establish disease-free sources of replacement stock.
- VS plans to complete the National Animal Health Monitoring System so that it can provide a statistically sound picture of selected animal health problems nationwide on a continuous basis. The system will be used to track disease and quantify the threat involved. For example, a prototype swine health survey in selected States has quantified the damage done by sows crushing their piglets. The precise statistics on piglet deaths from crushing range from 1.38 percent in Georgia to 2.09 percent in Maryland. Apparently, more piglets die from crushing than from any other cause.
- VS is becoming more actively involved in resolving food safety problems. For example, VS is participating in a preharvest pathogen-reduction program in support of USDA's Food Safety and Inspection Service. This program aims to reduce opportunities for animals and animal products to become infected before being processed.
- VS also is devoting more resources to resolving animal health problems impeding international trade, backing up the monitoring and negotiating efforts of APHIS' International Services. For example, VS is helping negotiate a "regionalized" approach to recognizing areas free of animal diseases. If trading partners agree, a disease-free zone can be set up without regard to national borders.

## Further Information

VS officials welcome inquiries about the programs to which they contribute. For further information, feel free to write:

Director, Operational Support Staff  
USDA-APHIS, VS  
P.O. Box 96464  
Washington, DC 20090-6464.



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